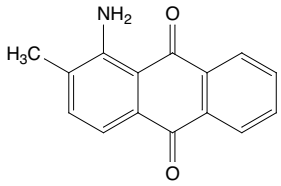
1-Amino-2-methylanthraquinone

CAS No. 82-28-0

Reasonably anticipated to be a human carcinogen

First listed in the *Third Annual Report on Carcinogens* (1983)



Carcinogenicity

1-Amino-2-methylanthraquinone is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity from studies in experimental animals.

Cancer Studies in Experimental Animals

Oral exposure to 1-amino-2-methylanthraquinone caused tumors in two rodent species and at two different tissue sites. Dietary administration of technical-grade 1-amino-2-methylanthraquinone increased the combined incidence of benign and malignant liver tumors (hepatocellular adenoma and carcinoma) in female mice. In rats, it caused liver cancer in both sexes and increased the combined incidence of benign and malignant kidney tumors (tubular-cell adenoma and carcinoma and adenocarcinoma) in males (NCI 1978).

Cancer Studies in Humans

No epidemiological studies were identified that evaluated the relationship between human cancer and exposure specifically to 1-amino-2-methylanthraquinone.

Properties

1-Amino-2-methylanthraquinone is an anthraquinone dye and dye intermediate that exists as an orange solid at room temperature (NCI 1978). It is practically insoluble in water; soluble in acetone, benzene, ethanol, ethylene glycol, monoethyl ether, and linseed oil; and slightly soluble in carbon tetrachloride (IARC 1982, ChemIDplus 2009). Physical and chemical properties of 1-amino-2-methylanthraquinone are listed in the following table.

Property	Information
Molecular weight	237.3[a]
Melting point	206°C[a]
Log K_{ow}	4.07[b]
Water solubility	0.332 mg/L at 25°C[b]
Vapor pressure	3.82×10^{-8} mm Hg at 25°C[b]

Sources: [a]HSDB 2009, [b]ChemIDplus 2009.

Use

1-Amino-2-methylanthraquinone was used almost exclusively as a dye and as an intermediate in the production of dyes. It was used as a dye for synthetic fibers, furs, and thermoplastic resins. The only dyes derived from 1-amino-2-methylanthraquinone that were produced in the United States were C.I. acid blue 47, last produced in 1973, and C.I. solvent blue 13, last produced in 1974 (IARC 1982, HSDB 2009).

Production

U.S. production of 1-amino-2-methylanthraquinone began in 1948 and ended in 1974 (IARC 1982). In 2009, 1-amino-2-methylanthraquinone was produced by one manufacturer in Europe (SRI 2009) and was available from twelve suppliers, including three U.S. suppliers (ChemSources 2009). U.S. imports of 1-amino-2-methylanthraquinone were last reported in 1972, when 120 kg (265 lb) was imported (IARC 1982).

Exposure

The primary routes of potential human exposure to 1-amino-2-methylanthraquinone are inhalation and dermal contact. The potential for exposure is limited, because 1-amino-2-methylanthraquinone is no longer produced commercially in the United States or reported to be imported. No data were found on environmental releases of 1-amino-2-methylanthraquinone. The potential for occupational exposure was greatest among workers engaged in textile dyeing; however, no data were found on the numbers of workers potentially exposed (HSDB 2009).

Regulations

Environmental Protection Agency (EPA)

Emergency Planning and Community Right-To-Know Act

Toxics Release Inventory: Listed substance subject to reporting requirements.

References

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